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TRANSFORMING EDUCATION THROUGH INFORMATION TECHNOLOGY

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

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Federal Communications Commission
1919 M Street, NW
Washington, DC 20554

Reference: NPRM 96-93 - Implementation of universal service
(PL 104-104, section 254, 47 USC 254)

Members of the Commission and Members of the Joint Board:

These informal comments are submitted on behalf of the six hundred colleges and universities whose information technology interests are represented by Educom, a nonprofit educational association.

Higher education in the United States is a diverse community with a common bond of commitment to serve the research and higher learning needs of the country. More than fifteen million students, enrolled at more than three thousand accredited institutions, are served by two million faculty and teaching staff and related support organizations. Annual expenditures of an estimated \$175 billion include more than one billion in purchase of conventional telecommunications services and a comparable or larger amount for computer and computer networking products and services.

The university community, because of its special role in conducting federally sponsored scientific research, has for many years been heavily involved with the development and use of computer and communications technology. Many innovations in communications, most notably the Internet, are traceable to work done on our leading research campuses.

As the Internet has progressed over the last decade from a research tool to an advanced communications infrastructure that is now utilized in nearly every college and university, the reliance on the network to achieve traditional teaching and research missions has correspondingly increased. However, the potential benefits of the Internet go far beyond the uses to which it has been put thus far. By diminishing the barriers of time and place, and by marrying the power of computers with advanced networking, the Internet is creating a more effective learning environment for both teachers and students. Within the academic research community, the network is enabling collaboration and collaborative tools in ways not previously attainable. Within the academic library community, the Internet and the World Wide Web are revolutionizing the storage, access and retrieval of scholarly information resources.

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A. Challenge to the Joint Board

Your proceedings to implement the universal service provisions of the 1996 Telecommunications Act go to the heart of the future of our national telecommunications system. Although there are more than 80 rulemakings required by the Act, it is in this proceeding that fundamental issues of the preservation of fairness and equity in a deregulated system must be addressed. The task is not made easier by the competing and frequently conflicting priorities which are implied by various sections of the new law, nor by the Congressional decision to entrust to you the challenge of assigning specificity to an array of new value-laden terms - such as "affordable," "evolving," "access," and "advanced" - on which reasonable people may, and surely will, differ.

Fortunately, the Congress also provided unprecedented flexibility in carrying out the universal service mandates of the Act. In section 254(b)(7), the Commission is empowered to use "Such other principles as the Joint Board and the Commission determine are necessary and appropriate for the protection of the public interest, convenience and necessity and are consistent with this Act." In section 401, [47 USC 160], the Commission is relieved from "applying any regulation or provision of this Act...if the Commission determines that...forbearance from applying such provision or regulation is consistent with the public interest."

B. Context for Universal Service Deliberations

It is important, in our view, that the Commission and the Joint Board establish an overall context for their deliberations on universal service. Large economic, technological and social forces are acting on the telecommunications environment in the United States and elsewhere. Decisions based on literal readings of regulatory statutes and prior case law are susceptible to being rapidly overtaken by events and thus rendered ineffective and irrelevant. As Commissioner Chong's Web Page attribution says, it is time for "out of the box" thinking.

The Commission and the States face several major issues in formulating a new basis for universal service. Among these are:

1. A continued blurring of the lines between the computer industry and the telecommunications industry as a result of technology-induced changes. One consequence is that the definition of which communications activities and which business entities fall within the Commission's jurisdiction and are required to contribute to universal service will become more and more difficult.
2. Confusion over the differences between universal service and universal access, which will only worsen as new digital products and services for use on the Internet are developed and introduced into the consumer marketplace.
3. Establishing long term goals for universal service while also dealing with a lengthy list of transition issues, including the complexity and perceived inequity of the current universal service system.
4. Identification of positive incentives, rather than negative penalties, for industry to support universal service goals.

Perhaps the most difficult challenge for the Commission and the Joint Board is determining the extent to which universal service goals will be met by the operation of a deregulated telecommunications industry, thus diminishing the need for direct government intervention.

C. Model for Telecommunications Policy

The Internet recommends itself as a basic model of future telecommunications policy for several reasons:

1. Its technical architecture is digital, distributed, scalable, open and layered. These features have allowed it to integrate well with existing analog and digital telecommunications systems, as well as with new digital technologies being developed by the computer hardware and software industry. It interoperates with many existing wireless services, and will have even greater wireless functionality in the future as digital technology is more widely deployed in wireless services. It also will interoperate with the Grand Alliance standard for digital television, which is the subject of a forthcoming Commission decision on Advanced Television Services.
2. The Internet is already deregulated as a result of previous FCC rulemaking. This farsighted decision was a major factor in the subsequent rapid development of the data communications industry and of what is now the Internet industry. The United States leads the world in networking technology, an economic success story that is due in no small part to the lack of barriers to entry in this very competitive marketplace.
3. The Internet supports a wide range of services, from very basic and inexpensive tools such as electronic mail, to advanced services such as virtual reality and multicast video. The emergence of the World Wide Web as the principal focus of Internet development efforts offers within a few years the prospect of a unified and easy to use interface to advanced communications services.
4. The Internet has a worldwide community of developers who are engaged in a major overhaul and upgrading of its underlying protocols and technologies to support future network requirements. These include areas such as security, electronic commerce, address space, authentication, reserved bandwidth for voice and video, and ease of use. The standards adopted by the Internet community are international, open and available without charge to all developers and users.
5. The Internet has a flexible economic structure which supports a variety of cost and pricing models and is rapidly differentiating into wholesale and retail service offerings to meet the needs of both businesses and individual consumers. The ease of entry into the Internet Service Provider (ISP) business has fostered a great deal of entrepreneurial activity and effective competition among several thousand providers. In less than five years, the ISP industry has established points of presence in every LATA, making the Internet accessible to essentially every access line termination in the country - nearly 150 million business locations and homes. The great majority of consumers have access within their local exchange flat rate dialing plan.
6. The Internet is already the vehicle through which nationwide efforts are underway to ensure outreach to disadvantaged individuals and populations. Nearly all institutions of higher education offer some level of free (i.e., uncharged) Internet access to their students. Recent reports from the Department of Education show that Internet access is available in approximately half of the nation's primary and secondary schools and the rate of growth in connections is more than ten percent a year, which may well realize President Clinton's goal of having all K-12 schools connected by the year 2000. More than \$100 million in matching grants for Internet connections has been disbursed by federal agencies and the White House has proposed a substantial expansion of this matching program. Many communities offer "Freenet" access to their residents without charge.

D. Evolution of Enhanced Services

In the 1996 Act, Congress has asked the Commission and the States to consider several aspects of the evolution of the national network, including effects on universal service definitions and the ensuring of access to enhanced services by education.

From the perspective of the Internet community, which is also the dominant view in higher education, the national network is in a transition from a vertically integrated business and technology model to a horizontally layered and disaggregated model. At the lowest layer of the new model is a broadband digital transport layer. This layer serves the same purpose in the future communications network that the concrete in our highway and road system does - it provides the means for universal movement of digital traffic. Digital bits will flow to and from computing devices at the ends of the network. The upper layers of the network are devoted to services that are primarily mediated by computers, digital televisions, digital voice sets, and an explosion of consumer electronics appliances yet to be developed and marketed. [An excellent discussion of the open network model is contained in the 1994 National Research Council report, *Realizing the Information Future, the Internet and Beyond.*]

As the network evolves, it will be important for the transport layer to be ubiquitous in serving every American home, business, institution and public place. For higher education, the achievement of widely held aspirations to move education from an ivory tower to an "any student, anywhere" paradigm is dependent on the availability of ubiquitous digital access.

As with any infrastructure, whether roads or railroads or airspace, the digital transport layer of the future network has elements of a "public commons." While the commons has great value in serving the public good, it is also vulnerable to abuse resulting from failure to maintain and protect it. Actions taken now by the Commission and the States to create a scalable digital transport foundation for the future network will not only contribute measurably to the broadest public interest but will be an important enabling factor for private investment in the products and services that will make use of and flow over the network.

E. Goals and Principles of Universal Service.

In this rulemaking, the Commission has invited comment on the seven principles of universal service contained in the 1996 Act. Reduced to their essentials, these principles are desired attributes of a future national communications and information infrastructure. In other words, as the traditional system of analog narrowband telephony which characterized telecommunications before divestiture goes through a transition to an integrated, broadband, digital system, how should the government continue to shape the system to ensure the achievement of universal service goals?

Educom believes the Commission and the Joint Board should establish four general priorities for changes to the universal service system:

1. Fix the problems with the present system before burdening it with new requirements. As a specific example, institutions of education at all levels typically are required to pay business rates for telephone service. These rates are substantially higher than those for residential service, which has created a situation in which education is cross-subsidizing consumers who pay the taxes which support education. Under the 1996 Act, the primary and secondary levels of education are to become beneficiaries of new cross-subsidies for education, which would make them the recipients of a subsidy to offset their subsidy of residential customers. Simply layering new subsidies on top of old subsidies not only further complicates an already overly complex system, but it

creates additional incentives for those entities providing the subsidies to escape them by leaving the public network.

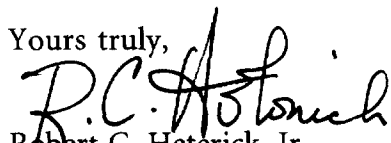
2. Reduce or eliminate barriers to common carrier voluntary support for universal service goals. As a specific example, most common carriers are currently prohibited from making gifts, grants or service discounts to education. This has created the perverse situation in which computer companies, including Internet service providers, make a wide range of free or reduced cost support available to education, whereas telecommunications companies do not because of tariff restrictions. Senator Robert Kerrey, in a talk to an Educom audience, made a point of his frustration in working with rural schools in Nebraska on Internet connections only to discover that the local telephone company wanted to help but was prohibited from doing so. Removing barriers such as these in the immediate future would not only level the playing field between the computer and communications companies, but it would assist in determining the extent to which universal service subsidies to education are required in addition to voluntary support.

3. Create incentives for full digitization of the public switched network. As has been widely discussed and written about elsewhere, the construction of broadband digital communications facilities is proceeding rapidly in both public and private networks except for the "last mile" to homes and small businesses. To some extent, this problem is a function of investment uncertainty in the last few years while waiting for Congress to pass telecommunications legislation. But the deployment of many new services depends on digital connectivity for cost effective implementation. These include community and social services such as home health care, energy management, all levels of multimedia education, Internet access, and enhanced 911. Examples of possible technology neutral incentives include tax write-offs for qualifying investments, accelerated depreciation, and temporary rate subsidies granted in proportion to total investment in broadband facilities.

4. Reduce the current bias in universal service in favor of conventional telephone switches and their associated services. Historically, universal service has only been associated with voice telephony. Indeed, most of the language on supported services in the Notice of Proposed Rulemaking refers only to functions associated with the circuit switches operated by the Regional Bell Operating Companies. As the range of technologies and services associated with network based communications continues to broaden, the universal service system should subsidize needed services independently of the technology on which they are based. As a specific example, there is no intrinsic need for Internet traffic to use any RBOC circuit switch. The present use of dial-up services via modem to gain access to the Internet is an unsatisfactory and expensive byproduct of the lack of a fully digital public network as discussed in the previous paragraph.

We thank the Commission for the opportunity to contribute these comments to its decision-making process in this rulemaking. We would be pleased to provide additional views and background information on universal service concerns of higher education at your convenience.

Yours truly,


Robert C. Heterick, Jr.
President